

## REMARKS

Reconsideration of the application as amended is respectfully requested. Claims 3, 4, 15, 16, 17, and 35 have been amended to replace “PP2A-4” with “protein phosphatase 2A catalytic subunit”. Support for this amendment is found throughout the application, appearing specifically at paragraphs [0032] and [0034], and in Table 4. Claims 17 and 35 have been amended to define the term “stringent conditions”. Support for this amendment specifically appears at paragraph [0058]. Claims 19, 31, and 32 have been amended to correct the antecedent basis. No new matter has been added by virtue of the amendments to the claims.

### Rejections under 35 U.S.C. § 112

Claim 35 stands rejected under §112, first paragraph, as containing new matter in the recitation of a recombinant expression vector containing a regulatory sequence that is not an *Arabidopsis thaliana* PP2A-4 promoter. This rejection is respectfully traversed.

The Examiner’s attention is directed to paragraphs [0090] to [0096] of the application, which describe many plant promoters as being suitable for use in the recombinant expression vector of the invention. For example, paragraph [0090] discloses that the recombinant expression vector of the invention may employ the 35S CaMV promoter, the 19S CaMV promoter, or the rubisco small subunit promoter. Paragraph [0091] discloses a salicylic acid inducible promoter (PCT Application No. WO 95/19443), a tetracycline inducible promoter (Gatz et al., 1992 Plant J. 2:397-404) and an ethanol inducible promoter (PCT Application No. WO 93/21334).. Paragraph [0092] discloses a pathogen inducible PRP1-gene promoter (Ward et al., 1993 Plant. Mol. Biol. 22:361-366), a heat inducible hsp80-promoter from tomato (U.S. Patent No. 5187267), a cold inducible alpha-amylase promoter from potato (PCT Application No. WO 96/12814) or the wound-inducible pinII-promoter (European Patent No. 375091), and the RD29A promoter, see Yamaguchi-Shinozaki et al. (1993 Mol. Gen. Genet. 236:331-340). Paragraph [0095] discloses the napin-gene promoter from rapeseed (U.S. Patent No. 5608152), the USP-promoter from Vicia faba (Baeumlein et al., 1991 Mol Gen Genet. 225(3):459-67), the oleosin-promoter from *Arabidopsis* (PCT Application No. WO 98/45461), the phaseolin-promoter from Phaseolus vulgaris (U.S. Patent No.

5504200), the Bce4-promoter from Brassica (PCT Application No. WO 91/13980) the legumin B4 promoter (LeB4; Baeumlein et al., 1992 Plant Journal, 2(2):233-9), the lpt2 or lpt1-gene promoter from barley (PCT Application No. WO 95/15389 and PCT Application No. WO 95/23230) and promoters from the barley hordein-gene, rice glutelin gene, rice oryzin gene, rice prolamin gene, wheat gliadin gene, wheat glutelin gene, maize zein gene, oat glutelin gene, Sorghum kasirin-gene and rye secalin gene as described in PCT Application No. WO 99/16890. Paragraph [0096] discloses the viral RNA-polymerase promoter described in PCT Application No. WO 95/16783 and PCT Application No. WO 97/06250 and the clpP-promoter from *Arabidopsis* described in PCT Application No. WO 99/46394. Moreover, Example 7 discloses the expression vector pBPSJYW016 containing the PP2A-4 nucleic acid under control of a constitutive super promoter.

Thus contrary to the Examiner's position, recombinant expression vectors comprising regulatory sequences that are not the *A. thaliana* protein phosphatase 2A catalytic subunit promoter are described in the application as filed. Withdrawal of the new matter rejection is therefore respectfully requested.

Claims 3-7, 15, 17, 29, 20, 31-33, and 35 stand rejected under §112, first paragraph, as failing to meet the written description requirement for the genus of nucleic acids that hybridize to SEQ ID NO:8 or its complement or for the genus of nucleic acids having at least 90% sequence identity with SEQ ID NO:13. The Examiner reiterates the position that a representative number of species falling within the claimed genus have not been described, on the ground that it is not established that "PP2A-4 activity" is the same as the activity exhibited by type 2A phosphatase polypeptides. This rejection is respectfully traversed.

The Examiner's attention is directed to paragraphs [0032] and [0034] of the application as filed, which state that the *Physcomitrella patens* PHSRP protein designated as PP2A-4 has homology to the catalytic subunit of protein phosphatase 2A and that in a preferred embodiment the PHSRP is a protein phosphatase 2A protein. The homologies between PP2A-4 and known catalytic subunits of protein phosphatase 2A proteins as disclosed in Table 4 of the application provide supporting evidence that PP2A-4 is a

protein phosphatase 2A catalytic subunit. Applicants have submitted Lizotte et al., which affirmatively states that protein phosphatase 2A serine/threonine phosphatase catalytic subunits are highly conserved, both structurally and functionally. Applicants have also submitted the Declaration of Ruoying Chen, which shows the sequence comparisons of PP2A-4 and the protein phosphatase 2A catalytic subunits disclosed in Table 4, affirmatively demonstrating that PP2A-4 contains the conserved serine/threonine phosphatase catalytic subunit motif LRGNHE.

The Examiner has cited no evidence to refute the objective truth of the statements in the application or the evidence of record. In the event that the instant rejection is based on facts within the personal knowledge of the Examiner, Applicants call upon her to provide such facts in an affidavit pursuant to 37 C.F.R. § 1.104(d).

No *prima facie* case has been made that the application fails to meet the written description requirement for the claimed genus. Accordingly, withdrawal of the instant rejection of claims 3-7, 15, 17, 29, 20, 31-33, and 35 under §112, first paragraph is respectfully requested.

Claims 3-7, 15, 17, 19-20, 31-33 and 35 stand rejected under § 112, first paragraph, as not being enabled for the entire scope of the claims. The Examiner questions the relevance of the serine/threonine phosphatase motif to the recitation of “PP2A-4 activity”. This rejection is believed to be obviated by the amendments to the claims, and its withdrawal is respectfully requested.

Claims 3-4, 15, 17 and 35, and claims 5-7, 19-20, and 31-33 dependent thereon stand rejected under § 112, second paragraph, as being indefinite in the recitation of “PP2A-4 activity”. Claims 17, 19, 31, 32 and 35 stand rejected under § 112, second paragraph, as being indefinite in the recitation of “stringent conditions”.

The amendments to the claims are believed to obviate all rejections under § 112, second paragraph, and withdrawal of this rejection is respectfully requested.

In light of the amendments, the arguments and the evidence presented, Applicants submit that all of the rejections contained in the Office Action dated October 31, 2006 have been overcome, and that the application is in condition for allowance or appeal.

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Should the Examiner wish to discuss the application further, she is invited to telephone the undersigned. If any additional fees are due with respect to this submission, authorization is hereby given to charge such fees, or to credit any overpayment, to Deposit Account No. 02-1197.

Respectfully submitted,  
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